Date of Report: 09/12/2014

BURNED-AREA REPORT
(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

A. Type of Report

[X] 1. Funding request for estimated emergency stabilization funds
[ ] 2. Accomplishment Report
[ ] 3. No Treatment Recommendation

B. Type of Action

[X] 1. Initial Request (Best estimate of funds needed to complete eligible stabilization measures)

[ ] 2. Interim Report #____.
[ ] Updating the initial funding request based on more accurate site data or design analysis
[ ] Status of accomplishments to date

[ ] 3. Final Report (Following completion of work)

PART II - BURNED-AREA DESCRIPTION

A. Fire Name: Beaver Fire

B. Fire Number: CA-KNF-005497

C. State: CA

D. County: Siskiyou

E. Region: 5

F. Forest: Klamath

G. District: Oak Knoll District

H. Fire Incident Job Code: P5H93T

I. Date Fire Started: 07/30/2014

J. Date Fire Contained: 08/31/2014

K. Suppression Cost: $27.2 million as of 8/31/2014

L. Fire Suppression Damages Repaired with Suppression Funds

1. **Fireline waterbarred (miles)**: Approximately 4 miles of handline and 15 miles of dozer line waterbarred.
2. **Fireline seeded (miles):** 0
3. **Other (identify):** All roads, staging areas, water drafting sites, etc. disturbed by suppression activities will be repaired to a condition that is as close to pre-fire condition as reasonably possible. Repairs include grading, back-blading berms, pulling vegetation over disturbed areas, re-shaping spur roads, etc.

M. Watershed Numbers:

Soil Burn Severity Acres by Watershed								
HUC	HUC Name	Very Low Burn Severity (Acres)	Low Burn Severity (Acres)	Moderate Burn Severity (Acres)	High Burn Severity (Acres)	Total Watershed Burned (Acres)	Total Watershed Area (Acres)	Percent Watershed Burned
180102060904	Dutch Creek-Beaver Creek	1313	5018	3662	1239	11232	12060	93%
180102060803	Empire Creek-Klamath River	1051	2205	270	2	3528	20967	17%
180102061004	Horse Creek	261	405	320	108	1094	38943	3%
180102060902	Hungry Creek-Beaver Creek	622	1146	230	86	2085	17165	12%
180102061005	Kohl Creek-Klamath River	342	1734	2320	310	4706	17775	26%
180102061002	Little Humbug Creek-Klamath River	176	1642	569	14	2402	12350	19%
180102061003	McKinney Creek-Klamath River	1150	3760	1817	229	6956	19357	36%
180102060903	West Fork Beaver Creek	216	229	20	0	465	20088	2%

Estimated acres of watershed burned includes both Klamath National Forest lands as well as Non-Forest Service lands.

N. Total Acres Burned:

[14,586] NFS Acres [ ] Other Federal [ ] State [17,882] Private

Soil Burn Severity Acres by Land Status					
Land Owner	**Very Low Severity (Acres)**	**Low Severity (Acres)**	**Moderate Severity (Acres)**	**High Severity (Acres)**	**Total Burned (Acres)**
Klamath NF	2161	7426	3915	1083	14586
Private	2970	8711	5295	906	17882
Total	5131	16137	9210	1989	32468

O. Vegetation Types: The Beaver Fire area is largely composed of oak woodland communities in various stages of development from oak dominated stands, to young conifer stands with well developed hardwood understories. California black oak (Quercus kelloggii Newberry) is the dominant oak, with ponderosa pine (Pinus ponderosa Lawson & C. Lawson), sugar pine (Pinus lambertiana Douglas), and Douglas-fir (Pseudotsuga menziesii Mirb. & Franco) as overstory species. The understory was primarily composed of Pacific madrone (Arbutus menziesii Pursh.), incense cedar (Calocedrus decurrens (Torr.) Florin), and canyon live oak (Quercus chrysolpeis Liebm.). Dominant shrubs included sticky white-leaf manzanita (Arctostaphylos viscida Parry), deer brush (Ceanothus integerrimus Hook. & Arn.) and buck brush (Ceanothus cuneatus (Hook.) Nutt.).

Plantations scattered throughout the burn area on both privately owned and Federal land were about 60 years old, dating back to after the Haystack burn of 1955, and composed of ponderosa pine and Douglas-fir as well as regenerating shrub fields (multiple species of Arctostaphylos and Ceanothus). The entire area within the fire perimeter had been burned or harvested/planted to some degree since 1955. At the upper elevations outside the fire perimeter where contingency lines were constructed around Dry Lake Mountain, Alex Hole, and Condrey Mountain, the coniferous vegetation type was mature red fir (Abies magnifica A. Murray var. shastensis Lemmon) with understory components that varied with disturbance regimes of fire and/or disease. Dry, gravelly, openings on ridges in the upper elevations around Dry Lake, consist of low profile herbaceous vegetation dominated by dwarf species of lupine (Lupinus sp.), and buckwheat (Eriogonum spp.).

P. Dominant Soils: During field surveys, soil conditions were described, post-fire resource damage conditions were noted, and threats to soil productivity were noted. The order 3 soil survey information was used to describe soilsof the area. Major soils associated with the fire area include Holland (25 percent), Skalan (25 percent), Lithic Mollic Haploxeralfs (11 percent), Clallam (9 percent), and Kang (5 percent). The Dubakella, Decry, Coboc, and Weitchpec soil types are present in minor amounts.

The Holland Series are formed in Granitic, Ultramafic or Metamorphic Rock. Skalan Series formed from residuum and landslide material from metamorphic and mafic plutonic rocks. Clallam Series formed from metamorphic rocks or glacial till. Kang, and Dubakella soils formed from Ultramafic rocks. Generally, soils within the Beaver Fire are moderately deep to very deep.

Q. Geologic Types:

The fire perimeter can be split into two separate geologic zones at Doggett Creek. The bedrock underlying eastern portion of the Beaver fire is a complex mix of meta-sedimentary/volcanic rock, peridotite/serpentine, amphibolite schist and granitic rock. This geologic zone is covered in medium-sized dormant landslide deposits overlying the bedrock that generally have failed perpendicular to the stream network. This leaves the stream channels steep and lined with landslide toe zones. This gives the landscape a steep, rugged appearance despite all of the landslide deposits on the hillslopes.

The western portion of the fire perimeter is mainly in Condrey Mountain graphitic schist bedrock. This bedrock is highly unstable due to the presence of graphite, which is commonly used as a lubricant, in the rock. The landslide pattern changes on this bedrock, instead of perpendicular to the stream network, the landslides have failed parallel to the tributaries. The hillslope is covered in large dormant landslides with narrow ridges between the drainages. The landscape appears rounded and gentle with a sand-dune appearance where the vegetation has been removed by the fire.

R. Miles of Stream Channels by Order or Class:

Flow Regime by Severity (Miles)					
Flow Regime	**Very Low Severity (Miles)**	**Low Severity (Miles)**	**Moderate Severity (Miles)**	**High Severity (Miles)**	**Total (Miles)**
Intermittent	20	66	37	10	**133**
Perennial	12	18	5	<1	**35**

S. Transportation System

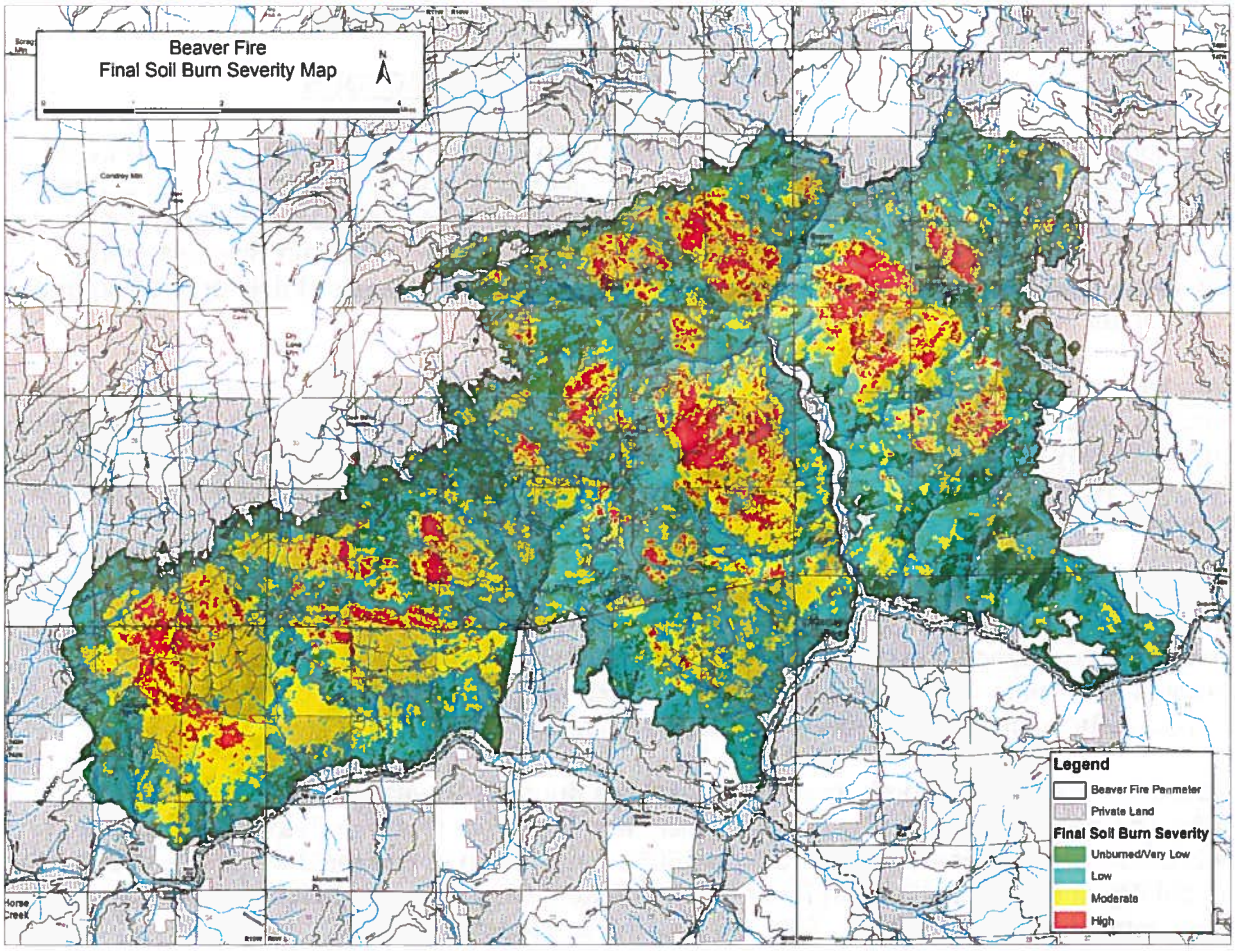
Trails: 0 **FS Roads:** 93 **County Roads:**1.3 **Private Roads:** 118

Miles of Roads by Severity					
	Very Low Severity (Miles)	**Low Severity (Miles)**	**Moderate Severity (Miles)**	**High Severity (Miles)**	**Total Burned (Miles)**
Klamath NF	17	44	28	4	**93**
County	.9	.4	0	0	**1.3**
Private	21	62	31	3	**118**

PART III - WATERSHED CONDITION

The Beaver Fire burned 32,468 acres west of Yreka, CA along the Klamath River corridor. The BAER Team assessed the incident and found the overall soil burn severity to be 16% unburned/very low severity, 50% low, 28% moderate, and 6% high. The high severity classes have evidence of severe soil heating to a depth of 0.25 to 1.5 cm, and moderate to high water repellency on approximately half the area. Erosion Hazard Rating (EHR) for the entire fire area is 19% low, 70% moderate, 11% high, and <1% very high. Notably, 70 percent of soils rate as moderate in unburned or low burn severity condition simply due to steeper slopes of the fire area. In other words, the soils are naturally erodible, and erosion rates will be increased after the fire, to varying degrees based upon soil burn severity and topography. For the total fire area, erosion rates are modeled at 9 tons per acre (range 0 to 22) for a single 10-year runoff event.

A. Burn Severity (acres): **(very low) 5,131 (16%)** **(low) 16,138 (50%)**
(moderate) 9,209 (28%) **(high) 1,989 (6%)**



B. Water-Repellent Soil (acres): 2,836 acres*.

**Assumes 50% water repellency of soils with high soil burn severity and 20% of soils with soil moderate burn severity.*

C. Soil Erosion Hazard Rating (acres):

6,169 acres low (19%), 22,728 acres moderate (70%), 3,571 acres High (11%), and 324 acres very high (<1%)

Estimates include both Klamath National Forest Lands and non-Forest Service Lands.

D. Erosion Potential:

	Storm Event		
	2-yr	5-yr	10-yr
ERMiT estimated hillslope erosion (tons/acre)	0.47	4.26	9.01

ERMiT estimated hillslope erosion (tons/acre) extrapolated for the whole fire area. Model accuracy is +-50%.

E. Sediment Potential: (tons per acre): 3.76

PART IV - HYDROLOGIC DESIGN FACTORS

The highest changes in peak runoff occur in the Dutch Creek-Beaver Creek, the Kohl Creek-Klamath River and the McKinney Creek-Klamath River watersheds. Most of the Dutch Creek-Beaver Creek watershed was in the fire and has a high amount of moderate and high soil burn severity. The Kohl Creek-Klamath River and the McKinney Creek-Klamath River watersheds had almost half of their acreages in the fire. These are the watersheds at risk for flooding and sedimentation.

Flooding from a five year storm event in these watersheds is not expected to alter hydrologic function radically. The increase in runoff from a five year storm in the Kohl Creek-Klamath River and McKinney Creek-Klamath River watersheds is the equivalent of a ten year storm event. A five year storm event in the Dutch Creek-Beaver Creek watershed is equivalent to somewhere between a ten year and twenty five year storm event.

Sedimentation is a greater concern. Many of the intermittent and ephemeral channels in the effected watersheds in the Beaver fire area are full of sediment. A significant storm event will mobilize this sediment sending it downhill onto forest roads and downstream to perennial streams such as Beaver, Doggett and Kohl Creeks where water quality could become a problem. These creeks are federally listed Coho critical habitat.

Most of the basins have probability of debris flows during a 10-year storm event of less than 10%. The basins for Dutch Creek, Fish Gulch, and Buckhorn Gulch in Beaver Creek have debris flow probabilities between 18% and 50%. Polly Gulch in Beaver Creek has a debris flow probability of 62%. The Klamath River tributaries Kohl Creek, Chase Gulch and Quigleys Cove have debris flow probabilities of 63%, 29% and 2% respectively.

Rock falls are a common occurrence in post-fire landscapes due to the increased surface water runoff, loss of stabilizing vegetation and the physical weathering that may occur from direct contact between the ground and fire. Tall road cuts on Highway 96 and on Beaver Creek Road

represent areas of high rock fall hazard. There are already rock slide signs along Highway 96 warning drivers of the threat.

A. Estimated Vegetative Recovery Period, (years): 5

B. Design Chance of Success, (percent): 90

C. Equivalent Design Recurrence Interval, (years): 5

D. Design Storm Duration, (hours): 12

E. Design Storm Magnitude, (inches): 2.14

F. Design Flow, (cubic feet / second/ square mile): 11.6

G. Estimated Reduction in Infiltration, (percent): 28

H. Adjusted Design Flow, (cfs per square mile): 14.8

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats (narrative):

The following is a brief summary of the values within and along the fire area as well as the threats to those values.

Values at Risk:

The risk matrix below, Exhibit 2 of Interim Directive No.: **2520-2010-1**, was used to evaluate the Risk Level for each value identified during Assessment:

Probability of Damage or Loss	Magnitude of Consequences		
	Major	Moderate	Minor
	RISK		
Very Likely	Very High	Very High	Low
Likely	Very High	High	Low
Possible	High	Intermediate	Low
Unlikely	Intermediate	Low	Very Low

Critical Value	Value At Risk	Potential Threat	Probability of Damage or Loss	Magnitude of Consequences	Risk	Emergency?	Treatment
Life/PVT property	Structures at confluence of Fish Gulch and Beaver Creek as well as the mouth of Dutch Creek and Beaver Creek	Debris Flow	Possible	Major	High	Yes	Coordinate with NRCS to better assess impacts and recommend treatments. Road treatments could reduce magnitude of consequences
Life/PVT property	Structures at Kohl Creek, Chase Gulch, and Beaver Creek	Debris Flow	Possible	Moderate	Intermediate	Yes	Coordinate with NRCS to better assess impacts and recommend treatments. Road treatments could reduce magnitude of consequences
Life/PVT property	Structures at confluence of Fish Gulch and Beaver Creek as well as the mouth of Dutch Creek and along the Klamath River	Flooding	Possible	Major	High	Yes	Coordinate with NRCS to better assess impacts and recommend treatments. Road treatments could reduce magnitude of consequences
Life/human safety	Safety on FS roads	Falling snags	Likely	Moderate	High	Yes	Close some roads, install gates and signs
FS Property	FS roads	Damaged or destroyed roads from debris flows and flooding	Likely- Very Likely	Moderate- Major	High- Very High	Yes	See Roads Attachment A
Natural resources	Native habitat prone to invasion	Noxious weeds	Likely	Moderate	High	Yes	Concurrent noxious weed surveys and treatment
Natural resources	Fisheries. Federally listed Coho Critical Habitat in Beaver, Kohl, and Doggett Creeks	Sedimentation	Likely	Moderate	High	Yes	Roads treatments recommended by Engineering

Values at Risk Narrative:

Life and Private Property Impacted by Debris Flows:
It is possible that on life/safety and property for the private lands in Kohl Creek, Chase Gulch, and along Beaver Creek (except for lands at mouth of Fish Gulch and Dutch Creek) may be damaged by debris flow. The consequence of a debris flow event will be moderate

as the residential structures are not likely to be directly hit by a debris flow. The risk of debris flow on these properties is intermediate. Which is considered an emergency since life/safety is the value at risk. There is no clear path for a debris flow on private land at Fish Gulch and Dutch Creek, this makes the consequence of a debris flow major because a residential structure could be hit directly by a debris flow. The risk is high and there is an emergency.

The treatments recommended for the FS road system include rolling and critical dips will allow for the road to better shed water and pass any debris flow that should occur with minimalimpact to the crossing. This will reduce the snowball effect of cascading road failures and allow for the roads to sustain the expected post-fire increase in peak flows. The road treatments are very likely to reduce the risk of damage from debris flows from an intermediate to a low for Kohl Creek, Chase Gulch, and Beaver Creek. Thus the treatments will mitigate the emergency in these basins. Road treatments are likely to lower the risk of damage by debris flow for Fish Gulch and Dutch Creek from high to intermediate, but will not eliminate the emergency for the two Values at Risk.

While it has been illustrated that hillslope treatments such as mulching and seeding can be effective in reducing debris flow potential and volume, these treatments must be employed over a large portion of the basin. This fire occurred in checkerboard land the FS owns only about 50% of the any given basin. This makes any land treatments that occur on FS less than desirably effective in reducing the risk from debris flows. Private lands treatments such as catchment basins, deflection berms, check dams, etc. may reduce the consequence of debris flows on the private land at Fish Gulch and Dutch Creek. These treatments will be the responsibility of NRCS and the land owner.

Life and Private Property Impacted by Flooding:
Homes on Beaver Creek near the confluence of Dutch Creek and Fish Gulch appear to be very close to the floodplain. The same can be said for homes and outbuildings next to tributaries of the Klamath River along highway 96. Increased runoff along with sediment and woody debris will possibly overtop or plug culverts causing the water to be diverted down the roads producing rilling and gullying on the roads. Much of the moderate and high soil burn severity areas of the fire are on steep terrain in a checkerboard area of ownership with alternating sections of private land with federal land. These conditions make it very difficult to implement effective hillslope treatments.

Magnitude of consequences to homes and outbuildings is major and probability of loss is possible resulting in a high risk. The recommended treatment is to coordinate with the NRCS to better asses impacts and recommend treatments and reduce increased runoff and sedimentation through stormproofing the road system with rolling and critical dips, cleaning culverts and ditches, and storm-patrol.

Life and Safety Impacted by Falling Snags:
Thirty-two miles of Forest Service roads pass through areas of moderate or high soil burn severity where nearly one hundred percent tree mortality has occurred. These areas represent a likely probability of snags falling and a moderate consequence to human safety resulting in a high risk. Short-term road closures and installing hazard signs will reduce exposure and alert Forest visitors of the danger of snags in the post-burn landscape..

Forest Service Roads:
Imminent hazards to the roads system vary from minor sloughing and culvert blockage to partial or total loss of road template. For the roads listed below, the probability of damage or loss is likely to very likely and the magnitude of consequences is moderate to major. The risks to human life and safety, Forest Service infrastructure, and Coho critical habitat is high to very high.

A discussion of the major proposed roads to be treated under BAER is discussed below:

Forest Highway 11 (2.05 miles of treatment) – Level 5 Road that borders Beaver Creek. In addition to private residences access to their property, the road is a major forest transportation route. Closure of the road would severely hinder the forest's operations in the area. It is also the only access to Beaver Creek Campground. Additionally, Beaver Creek has been determined to be critical habitat for Coho Salmon and the road failure would very likely deliver a significant sediment into the creek.

Forest Highway 12 (5.84 miles of treatment) – Level 3 Road which closure would severely hinder the forest's operations in the area. This route is an alternative route to Highway 96 for residents down the Klamath River from the Beaver Fire. Additionally, the 12 road, combined with the 46N20Y and 47N56 roads provides private residences below an escape route should they need to be evacuated for a fire, flood or any other disaster as well access for emergency responders. Treatment of this road will also reduce likelihood of impacts on Doggett Creek and Kohl Creek Coho salmon critical habitat.

47N44 (2.17 miles of treatment) – Level 3 Road which closure would severely hinder the forest's operations in the area. The road passes through and below high and moderate burn severity in watersheds with elevated debris flow probabilities. Failure of the road would very likely transport significant sediment to Beaver Creek.

47N40 (2.03 miles of treatment) – Level 2 Road which passes below high and moderate burn severity in watersheds with elevated debris flow probabilities and failure of the road would likely transport significant sediment to Dutch and Beaver Creek. This level 2 road along with 18N32 and 47N56 do not fit the textbook definition of a level 2 road; they could be considered almost level 3 roads. These roads provide access to large tracks of Forest Service lands, are used extensively for administrative and public use, and are easily drivable by pickups and SUV's.

18N32 (0.59 miles of treatment) – This Level 2 road is the only access road to the Buckhorn Bally Lookout Administrative Site. The lookout was recently renovated in 2012. Closure of the road would undermine the investment recently put in by the forest. It would also hinder the ability of the forest in their daily operations not only for the stationed lookout but could potentially delay fire reporting and location identification thereby putting additional lives and resources at risk. This staffed lookout does not have a helicopter landing zone so the 18N32 road provides the only access.

47N56 (1.71 miles of treatment)– This level 2 Road travels through a large area of high soil burn severity in Kohl Creek, which has the highest probability of debris flow out of all the drainages in the fire at 63%. The proposed road work will reduce the probability and magnitude of consequences of debris flows and flooding on Forest Service roads and Kohl Creek Coho salmon critical habitat. Also, when combined with the 12 road and the 46N20Y,

this road provides private residences below an escape route should they need to be evacuated for a fire, flood or any other disaster.

46N20Y (1.05 miles of treatment) – Although shown as a Level 1 in INFRA, this road has not been closed for many years, is passable with a truck or SUV, and is utilized for administrative and public use. It will be changed in INFRA to level 2. Also, it and 47N56 connect from county road 8F001 to the 12 road and are the only access to two sections of FS land. This road also passes through a large area of high soil burn severity in Kohl Creek so the proposed road work is important to protect downstream values at risk. Additionally, many private residences have driveways coming off of this road and closure of the road would prevent access to their personal property and eliminate an escape route should they need to be evacuated for a fire, flood or any other disaster.

Native Habitat Prone to Invasion:
It is likely that invasive species were spread into un-infested areas and/or dormant seed banks were reactivated in this Beaver Fire area as a result of the use of potentially contaminated equipment and the disturbance of known noxious weed sites. The consequences are moderate because spread and introduction of noxious weeds in this Beaver Fire area would cause damage to critical natural resource values, which would result in long term adverse effects. The resulting risk is high and treatments recommended include initial detection surveys and concurrent treatment of any small noxious weed populations located during surveys. Additionally money is requested to have Siskiyou County Dept. of Agriculture treat a camp location on private property that contains yellow starthistle and spotted knapweed. This camp, which was used in the Beaver Fire, is a likely vector of the spread of weeds onto Forest Service and will likely be used again in future fires.

Sedimentation of Federally listed Coho Salmon Critical Habitat:
Coho salmon critical habitat exists along the entire length of Beaver Creek with the fire perimeter as well as 1.6 miles of Doggett Creek and 0.8 miles of Kohl Creek. Many of the intermittent and ephemeral channels in the affected watersheds in the Beaver fire area are full of sediment. A significant storm event will mobilize this sediment and send it downstream to perennial streams such as Beaver, Doggett and Kohl Creeks where water quality could become a problem, especially for the Coho salmon critical habitat. The probability of damage to coho critical habitat is likely and the magnitude of the loss is moderate, which results in a high risk. The recommend treatments to reduce sedimentation is through stormproofing the road system with rolling and critical dips, cleaning culverts and ditches, and storm-patrol.

B. Emergency Treatment Objectives (narrative): The primary objective of this Burned Area Emergency Response Report is to recommend prompt actions deemed reasonable and necessary to effectively protect, reduce or minimize significant threats to human life and property and prevent unacceptable degradation of natural resources. The application of these BAER treatments would minimize on-site damages to the identified values at risk. The emergency treatments being recommended by the Little Deer Fire BAER Team are specifically designed to achieve the following results.

Proposed Treatments
The objectives of the treatments are to:

1. Protect human life and safety by signing hazards, closing roads, protecting escape

routes, and reducing impactsfrom flooding and debris flows by treating Forest Service Roads and coordinating with NRCS.
2. Protect Forest Service investment in road infrastructure by improving road surface drainage through construction of rolling dips, cleaning culverts, and storm-patrol.
3. Protect habitat of federally listed Coho Salmon by treating Forest Service Roads, especially near Beaver Creek.
4. Protect ecological value of biological diversity by monitoring and treating as necessary, sites where introduction of noxious weeds may have occurred in previously uninvaded sites.

C. Probability of Completing Treatment Prior to Damaging Storm or Event:

Land 90% **Roads/Trails** 90% **Protection/Safety** 90%

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	80	90	90
Roads/Trails	80	90	90
Protection/Safety	90	90	90

E. Cost of No-Action (Including Loss): $2,250,000

F. Cost of Selected Alternative (Including Loss): $744,826

G. Skills Represented on Burned-Area Survey Team:

[X] Hydrology	[X] Soils	[X] Geology	[ ] Range
[ ] Forestry	[ ] Wildlife	[ ] Fire Mgmt.	[X] Engineering
[ ] Contracting	[ ] Ecology	[X] Botany	[X] Archaeology
[ ] Fisheries	[ ] Research	[ ] Landscape Arch	[X] GIS

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Team:
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Jeanne Goetz, Heritage
Ken Bigelow, Engineering
Dave Seiler, Engineering
Dave Young, Soil Scientist
Nikos Hunner, Soil Scientist

H. Treatment Narrative:

Land Treatments:

Noxious Weed/Invasive Plant Detection Surveys and Treatment
Treatments to mitigate the noxious weed emergency include initial detection surveys and subsequent treatment of any noxious weed populations located during surveys. Detection surveys will be conducted along completed fire lines (dozer lines), drop points, staging areas, heli-spots, heli-wells, campgrounds, and existing roads where invasion by noxious weeds is most probable. Surveys will begin in 2015 during appropriate seasonal times for detection of target noxious weed/invasive plant species.

All newly discovered noxious weed populations on Forest Service land will be mapped and entered into the National Resource Inventory System (NRIS) according to National protocol. Treatment will be recorded as directed by the same National protocols. Noxious weed treatment on Forest Service land will consist of hand pulling to root depth and if seed is present, plants will be bagged and properly disposed.

Since this area contains an equal amount of private land which is likely to be harvested and re-planted immediately post fire, and there are usually no noxious weed prevention design features on private lands, coordination with the local County Department of Agriculture will occur for possible weed treatment in areas that may impact KNF botanical resources.

Agency	Survey/Treatment Needs						Cost			
Agency	Dozer lines (miles)	Hand lines (miles)	Drop Pts/Helispots/ Staging Areas (Acres)	Roads (miles)	Trails (miles)	Camps (Acres)	Labor	Mileage	Project Adm.**	Total
Forest Service	0.5	0	4	15	0	1	$5,190.00	$650.00	$2,060.00	$7,900.00
County Ag.				TBD		1	$420.00	*	$246.00	$666.00
							$5,610	$650	$2,306	**$8,566.00**

Labor estimate based on FY 2015 rates:

Personnel	Cost	Days	Total
One GS-5	$134.00	15	$2,010
One GS-7	$165.00	15	$2,475
One GS-9	$235.00	5	$1,175
One GS-11	$318.00	5	$1,590
County Ag Vegetation Control Supervisor	$246.00	1	$246
County Ag Vegetation Control Specialist	$132.00	2	$264
County Ag Aid	$78.00	2	$156

* Mileage included in County Ag. Match of 20%.

** Project Administration includes: hiring, training, data entry, reporting, and crew supervision FS: (2 days for GS-9 and 5 day for GS-11)

Roads Treatments:
Proposed treatments include storm patrol, culvert cleaning, replacing burned gates and installing hazard warning signs, drop inlets, culvert aprons, and critical dips. The work proposed herein is intended to stabilize the identified roads and structures in preparation for the anticipated increase in storm water runoff. Additional, several work elements involve public safety hazards. Specific treatment details for each road are noted in Appendix 1.

Modification of existing culverts and critical dips were the first option considered when drainage features were identified to be at high risk of failure as a result of post fire conditions. A few strategically placed rolling dips at in-board ditch cross drains were designed to prevent cascading cross-drain failure. Culvert replacement was recommended at eight crossings because damaged culverts were not functional and repair or modification was not feasible. Due to the depth of the culverts and steepness of the channels at crossings, pulling culverts and installing rocked fords was ruled out.

There is an active landslide that has caused a partial failure of about 80 feet of the 47N56 road. The road prism is currently unstable and at further risk of failure given the extent of high and moderate soil burn severity directly above the slide. The proposed rock buttress wall is needed to prevent a complete loss of the road prism and potential of cascading failures on roads down slope.

Protection/Safety Treatments:

Included in the road treatments. Gates will be installed and signs posted to warn the public of hazards. Specific treatment details for each road are noted in Appendix 1.

I. Monitoring Narrative: None requested

Part VI –Emergency Stabilization Treatments and Source of Funds

			NFS Lands				Other Lands			All
		Unit	# of		Other	# of	Fed	# of	Non Fed	Total
Line Items	Units	Cost	Units	BAER $	$	units	$	Units	$	$
A. Land Treatments										
Weeds Treatment	Each	$8,566	1	$8,566	$0		$0		$0	$8,566
							$0	$1.00	133	$133
Insert new items above this line!										
Subtotal Land Treatments				$8,566	$0		$0		$133	$8,699
B. Road and Trails										
Road Treatments	Each	$ 496,053	1	$496,053	$0		$0		$0	$496,053
							$0		$0	$0
Insert new items above this line!										
Subtotal Road & Trails				$496,053	$0		$0		$0	$496,053
C. Protection/Safety										
Install Signs	Each	$ 500	25	$12,500						$12,500
Replace Gates	Each	$ 3,000	2	$6,000	$0					$6,000
Subtotal Protection/Safety				$18,500	$0		$0		$0	$18,500
E. BAER Evaluation										
				$32,500	$0		$0		$0	$32,500
Insert new items above this line!				---	$0		$0		$0	---
Subtotal Evaluation				---	$0		$0		$0	---
G. Totals				$523,119						$523,252
Previously approved										
Total for this request				**$523,119**						**$523,252**

PART VII - APPROVALS

1. _____ 9.12.14
Forest Supervisor (Klamath NF) (signature) Date

2. _____ _____
R5 Regional Forester (signature) Date